

Serial No.: 10/533,734
Group Art Unit No.: 1648

AMENDMENTS TO THE CLAIMS

Listing of the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A pharmaceutical composition comprising a polynucleotide that comprises a sequence encoding an HIV gp120 envelope protein operably linked to a heterologous promoter, wherein the gp120 encoding sequence is linked to a sequence encoding HIV RT and a sequence encoding HIV Gag and a sequence encoding HIV Nef to encode a gp120, RT, Gag and Nef-containing fusion protein and wherein the HIV gp120 envelope protein is lacking a functional secretion signal and is substantially non-glycosylated when expressed in a mammalian target cell, and at least one pharmaceutically acceptable excipient, diluent, and/or carrier.
2. - 6. (Cancelled)
7. (Currently amended) The pharmaceutical composition of claim [[6]]1, wherein the fusion protein is selected from:
 - a fusion protein comprising in the 5' to 3' direction: gp120-RT-Nef-Gag, and
 - a fusion protein comprising in the 5' to 3' direction: RT-Nef-Gag-gp120.
8. – 11. (Cancelled)
12. (Currently amended) The pharmaceutical composition of claim [[5]]1, wherein the Gag comprises one or both of P17 and P24.

Serial No.: 10/533,734
Group Art Unit No.: 1648

13. (Currently amended) The pharmaceutical composition of claim [[5]]1, wherein at least one of the sequences encoding gp120, Nef, Gag, and RT and Tat is codon optimised to resemble codon usage in a highly expressed human gene.

14. (Currently amended) A pharmaceutical composition comprising a nucleic acid comprising in the 5' to 3' direction a polynucleotide sequence selected from the group of:

~~codon optimized gp120 lacking a secretion signal,~~
~~codon optimized gp120 lacking a secretion signal - tr Nef,~~
~~codon optimized gp120 lacking a secretion signal - tr Nef - mTat,~~
~~codon optimized gp120 lacking a secretion signal - Nef - mTat,~~
~~codon optimized gp120 lacking a secretion signal - p17/24 Gag - tr Nef,~~
~~codon optimized gp120 lacking a secretion signal - p17/24 Gag - tr Nef - mTat,~~
~~codon optimized gp120 lacking a secretion signal - p17/24 Gag - Nef - mTat,~~
~~codon optimized gp120 lacking a secretion signal - p17/24 Gag - mNef - mTat,~~
~~codon optimized gp120 lacking a secretion signal - p17/24 Gag - L1Nef - mTat,~~
~~codon optimized gp120 lacking a secretion signal - p17/24 Gag - L2Nef - mTat,~~
~~codon optimized gp120 lacking a secretion signal - p17/24 Gag - LLNef - mTat,~~
~~codon optimized gp120 lacking a secretion signal - p17/24 Gag - mL1Nef - mTat,~~
~~codon optimized gp120 lacking a secretion signal - p17/24 Gag - mL2Nef - mTat,~~
codon optimized gp120 lacking a secretion signal - mRT - trNef - p17/24 Gag, and
mRT - trNef - p17/24 Gag - codon optimized gp120 lacking a secretion signal,

wherein the RT and Gag are codon optimized,

and at least one pharmaceutically acceptable excipient, diluent, and/or carrier.

15. (Previously presented) The pharmaceutical composition of claim 1, wherein the promoter is from an HCMV IE gene.

Serial No.: 10/533,734
Group Art Unit No.: 1648

16. (Previously presented) The pharmaceutical composition of claim 15, wherein a 5' untranslated region comprising exon 1 of the HCMV IE gene is between the promoter and the coding sequences.

17. (Currently amended) A pharmaceutical composition comprising a set of polynucleotides comprising the polynucleotide of claim 1, and at least one further polynucleotide encoding ~~at least one chosen from the group of: HIV Nef, Gag, RT and Tat.~~

18. (Previously presented) The pharmaceutical composition of claim 17, wherein the polynucleotides are contained on a single vector under the control of at least one separate promoter.

19. - 20. (Cancelled)

21. (Currently amended) The pharmaceutical composition of claim 1, wherein the polynucleotide sequence encoding the fusion protein gp120 is in a vector.

22. (Previously presented) The pharmaceutical composition of claim 21, wherein the vector is a double stranded DNA plasmid.

23. (Previously presented) The pharmaceutical composition of claim 21, wherein the vector is a replication defective adenovirus vector.

24. (Previously presented) The pharmaceutical composition of claim 23, wherein the vector is derived from the group of: Pan 9, 5, 6 and 7.

25. - 27. (Cancelled)

28. (Previously presented) The pharmaceutical composition of claim 1, further comprising an adjuvant.

Serial No.: 10/533,734
Group Art Unit No.: 1648

29. (Previously presented) The pharmaceutical composition of claim 1, wherein the carrier is a plurality of particles.
30. (Previously presented) The pharmaceutical composition of claim 1, wherein the pharmaceutical composition is suitable for delivery in a prime boost format.
31. (Previously presented) An intradermal delivery device comprising the pharmaceutical composition of claim 1.
32. (Withdrawn) A method of treating a patient suffering from or susceptible to a disease caused by HIV comprising administering a safe and effective amount of the pharmaceutical composition of claim 1.
33. - 35. (Cancelled)
36. (Previously presented) The pharmaceutical composition of claim 1, wherein the carrier is gold beads.